REMARKS

This amendment is submitted in response to the Examiner's Action dated March 27, 2006. Applicant has amended the claims to clarify and more completely recite key features of the invention and overcome the various claim objections and § 101 and 112 rejections. No new matter has been added, and the amendments place the claims in better condition for allowance. Applicant respectfully requests entry of the amendments to the claims. The discussion/arguments provided below reference the claims in their amended form.

CLAIMS OBJECTIONS

In the present Office Action, Claims 5, 8, 10, 14, 16-18, 20, 21, 23, 25 are objected to because of informalities. Accordingly, Applicant has amended Claims 5, 8, 10, 14, 16-18, 20, 21, 23, 25 to remove the stated informalities and overcome the claim objections. Applicant respectfully requests entry of the amendments and removal of the objections to the claims.

DOUBLE PATENTING

At paragraph 20 of the present Office Action, Claims 1, 7, 11, 19 and 22 are provisionally rejected on the ground of non-statutory obviousness-type double patenting as being unpatentable over Claims 1, 3, 9, 11, 16 and 18 of copending Application No. 10/697,899. Applicant submits herewith a terminal disclaimer in compliance with 37 CFR 1.321(c). The filing of the terminal disclaimer overcomes the double patenting rejection and places the claims in condition for allowance.

CLAIMS REJECTIONS UNDER 35 U.S.C. § 101

At paragraph 5 of the present Office Action, Examiner rejects Claim 19 (and thus dependent Claims 20-24 and 25) under 35 U.S.C. § 101. Accordingly, Applicant has amended Claim 19 to recite "tangible" medium and thus overcome the § 101 rejection. Applicant respectfully requests entry of the amendment and removal of the § 101 rejection.

CLAIMS REJECTIONS UNDER 35 U.S.C. § 112

At paragraph 3 of the present Office Action, Claims 6-9, 15, 16, 18, 20-24 are rejected under 35 U.S.C. § 112, second paragraph, as being indefinite. Applicant has amended the claims to more definitively recite each element held to be indefinite. The amendments overcome the §

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112 rejections, and Applicant respectfully requests reconsideration of the rejection in light of the amendment.

CLAIMS REJECTIONS UNDER 35 U.S.C. § 102

At paragraph 7 of the present Office Action, Claims 1-8, 11-15, 18, 19-22, 24 are rejected under 35 U.S.C. § 102(e) as being anticipated by *Kano et al.* (U.S. Patent No. 6,725,328). *Kano* does not anticipate Applicant's claimed invention because *Kano* does not teach each feature recited by Applicant's claims. More specifically, *Kano* fails to teach the following features of Applicant's claims:

(a) "... substantially preventing I/O failure due to insufficient storage space ... [by]: dynamically expanding the storage space available within said file system <u>to increase the size of the file system based on the amount of additional space required within the file system to accommodate said I/O operation,</u> wherein additional space on said volume group is allocated to said file system <u>only when the size of an existing space on the file system is not sufficient to accommodate the I/O operation</u>" (Claim 1, emphases added);

(b) "... signaling a logical volume manager (LVM) of a need for **a specific size of** additional storage space <u>within the file system</u> for completing said I/O <u>operation;</u> completing an automatic expansion of a logical volume hosting said file system, wherein said dynamically **expanding** step expands said file system into <u>at least **the specific size of**</u> available space within said logical volume following said automatic expansion" (Claim 5, emphases added);

(c) "...parsing parameters from <u>an</u> I/O command for <u>a size of required storage space</u> to complete said I/O operation; **comparing** said <u>required</u> storage space with an **available storage space size** within said file system; <u>and triggering the dynamic expansion only when the size of available storage space is less than the required storage space</u>" (Claim 7, emphases added).

Kano generally provides a volume provider unit that "detects a logical block address of a read or write I/O accessing a logical volume of a storage device" and expands or reduces a storage domain according to a **logical block address (LBA)** fetched (Abstract/Summary). The various cited sections of *Kato* specifically describe interactions based **solely** on the **LBA** (e.g., block 6002 of Fig. 6 "detect LBA of I/O"). That is, as shown by Fig. 14, which is described at col. 8, ll 46-65, the availability of existing space at a different LBA within the volume would not be considered when **allocating additional storage for the particular LBA**. Rather, the specific

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disk associated with that LBA is added to the file system, even if the I/O could have been completed within the currently available space (i.e., the size of the I/O could be accommodated within existing space on the volume without adding an additional disk/segment).

Clearly, *Kano* does not teach or suggest determining the size of the space required to complete the I/O, then determining the size of existing/available space on the filesystem, and/or then expanding the filesystem size/capacity only when the existing space is not sufficient to accommodate the required space for the I/O. The standard for a § 102 rejection requires that the reference teach each element recited in the claims set forth within the invention. As clearly outlined above, *Kano* fails to meet this standard and therefore does not anticipate Applicant's invention.

CLAIM REJECTIONS UNDER 35 U.S.C. § 103

In the present Office Action, Claims 9-10, 16-17, 23, 25 are rejected under 35 U.S.C. 103(a) as being unpatentable over *Kano*. These claims each depend on an independent (and perhaps a dependent) claim, which Applicant has shown to be allowable over *Kano*. The above claims are therefore also allowable.
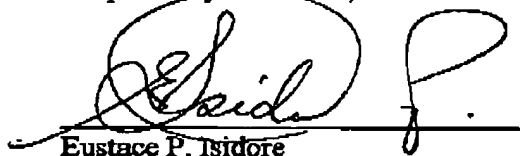
Applicant, however, notes that Examiner provides no reference to support his assertions of obviousness for the above claims. Applicant respectfully requests that Examiner provide some evidence to support the assertion that (a) use of an iterative expansion or use (b) of a pre-calculated expansion of the file system within Applicant's invention would have been obvious at the time of Applicant's invention.

CONCLUSION

Applicant has diligently responded to the Office Action by amending the claims to overcome claim objections, § 101 and 112 rejections, and to clarify and/or more completely recite certain features within specific claims. Applicant has also filed herewith a terminal disclaimer to overcome the provisional double patenting rejection. Additionally, Applicant has provided clear and convincing arguments which rebut the §§ 102 and 103 rejections by explaining why Applicant's claims are not anticipated by or obvious in light of *Kano*. Since the terminal disclaimer, claim amendments and arguments overcome the objections and the various rejections (i.e., double patenting and §§ 101, 112, 102 and 103 rejections), Applicant respectfully requests issuance of a Notice of Allowance for all claims now pending.

Applicant further requests the Examiner contact the undersigned attorney of record at 512.343.6116 if such would further or expedite the prosecution of the present Application.

Respectfully submitted,

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